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APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A  
FILING DATE.

APPLICATION NUMBER: 60/458,489

FILING DATE: March 28, 2003

RELATED PCT APPLICATION NUMBER: PCT/US04/09620

By Authority of the  
COMMISSIONER OF PATENTS AND TRADEMARKS



A handwritten signature in cursive script, appearing to read "N. Williams".  
N. WILLIAMS  
Certifying Officer

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3 - 3406938489 - 0528511/Pro

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## PROVISIONAL APPLICATION COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION under 37 CFR 1.53(c).

DOCKET NUMBER: B01075.70039  
Express Mail Label No. EV 208 517 799 US  
Date of Deposit: March 28, 2003C979 U.S. PRO  
60/458489  
03/28/03

## INVENTOR(S)/APPLICANT(S)

LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)
Stevens-Wright	Debbie		North Andover, MA
Sagon	Stephen	W.	Amherst, NH

 Additional inventors are being named on the separately numbered sheets attached hereto.

## TITLE OF THE INVENTION (280 characters max)

ELECTRODE FOR ELECTROPHYSIOLOGY CATHETER HAVING AN ECCENTRIC SURFACE

## CORRESPONDENCE ADDRESS

CUSTOMER NUMBER:  
  
23628

## ENCLOSED APPLICATION PARTS (check all that apply)

 Specification - Number of Pages = 8 Drawing(s) - Number of Sheets Application Data Sheet, See 37 CFR 1.76 Return receipt postcard

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

 No Yes, the name of the U.S., Government Agency and the Government Contract Number are: Other: \_\_\_\_\_

## METHOD OF PAYMENT (check all that apply)

 A check is enclosed to cover the Provisional Filing Fees. The Commissioner is hereby authorized to charge any additional fees or credit overpayment to Deposit Account 23/2825. A duplicate of this sheet is enclosed. Small Entity Status is claimed.

PROVISIONAL FILING FEE AMOUNT \$ 160.00

Respectfully submitted,

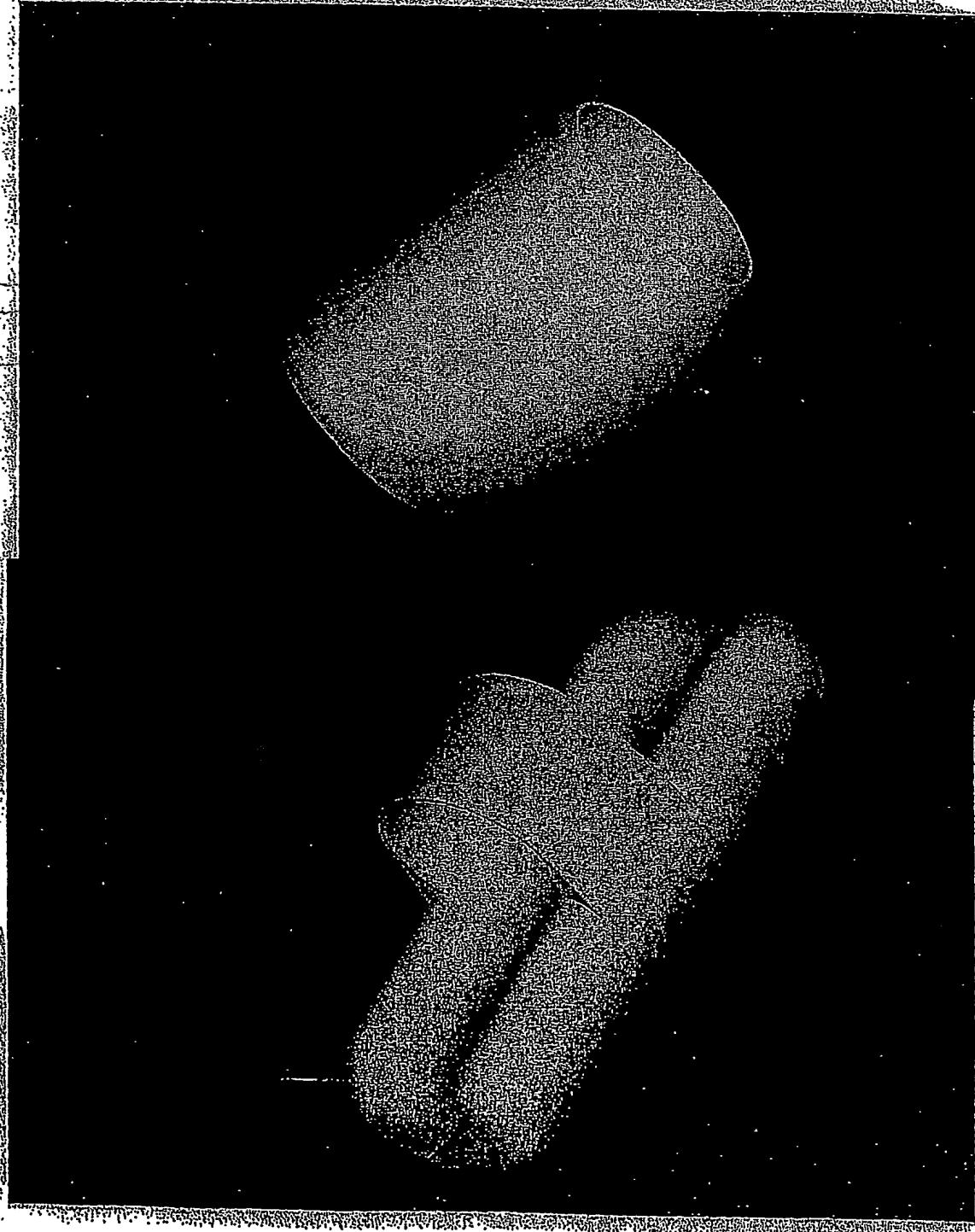
March 28, 2003

Date

  
James H. Morris, Reg. No. 34,681  
Telephone No.: 617-720-3500

### Description of Eccentric Electrode

The "Eccentric Electrode Design" has a large tissue contact surface area. This surface area is larger than the blood contact surface area of the electrode. The objective of the larger tissue contact surface area is to produce deeper ablation lesions. In addition the electrode will minimize the mass in contact with the blood. The smaller mass will assure that minimal heating occurs along the blood contact surface. Two embodiments of the design are shown below.



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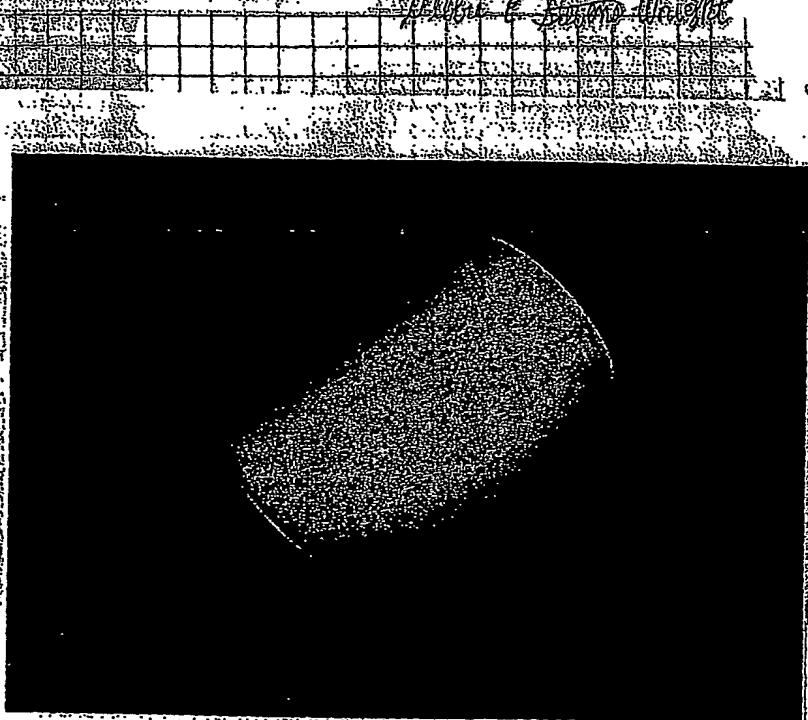


TITLE Eccentric Electrode

**From Page No.**

### Description of Eccentric Electrode

The "Eccentric Electrode Design" has a large tissue contact surface area. This surface area is larger than the blood contact surface area of the electrode. The objective of the larger tissue contact surface area is to produce deeper ablation lesions. In addition, the electrode will minimize the mass in contact with the blood. The smaller mass will assure that minimal heating occurs along the blood contact surface. The eccentric electrode design is shown in Figure 1.



~~William G. Moore-Wright~~

To Page No.

60456489 .0328

TITLE *Forensic Electrode*

From Page No.



*Office of the Sheriff*

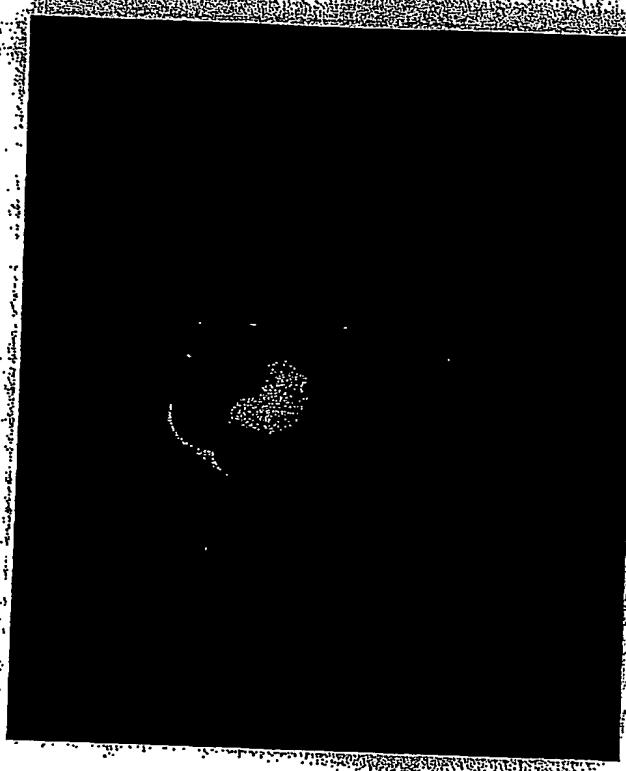
TITLE *Fore*

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TITLE Eccentric Electrode

From Page No.



To Page No. 3

To Page No.

Eccentric Electrode

## TITLE Eccentric Electrode Design

111

From Page No.

Analysis of eccentric electrode design shows that the convective flow across the tissue surface is improved with this design. This design helps to lift the catheter tubing away from tissue surface, thus improving blood flow across the tissue surface. This cooling allows more energy to be transferred into the tissue before reaching the maximum tissue temperature of 100°C. The chart below shows the relative improvement that this design offers over various other designs. The diagram below shows the offset for a 9F, 4mm electrode design.

Electrode  
2.997 mm (.118")

tissue  
8010 mm (.316")  
(.031")

elbowment  
228604 mm (.009")

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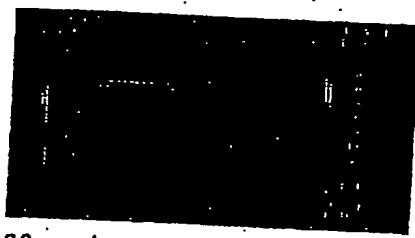
60458489 . 032803

TITLE Eccentric Electrode Design

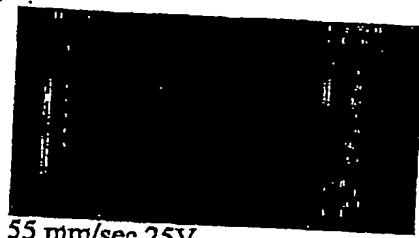
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*Temperature and Velocity Profiles*

9F Can Guppy 4mm - Temperature and Velocity Profiles



30 mm/sec 25V



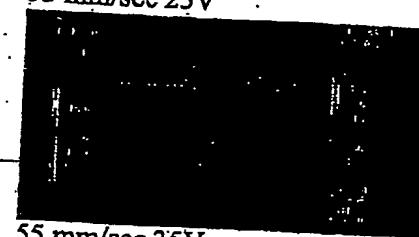
55 mm/sec 25V



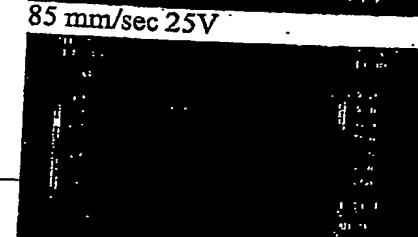
85 mm/sec 25V



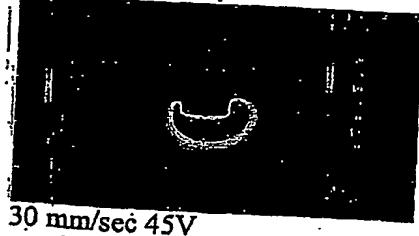
30 mm/sec 35V



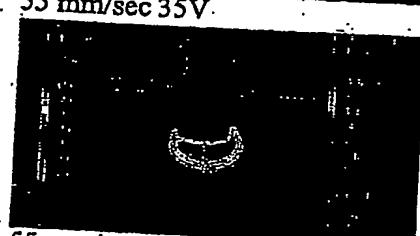
55 mm/sec 35V



85 mm/sec 35V



30 mm/sec 45V



55 mm/sec 45V



85 mm/sec 45V

*Debbie E. Stevens (Weigle)*

TITLE Eccentric Electrode Design

Length.							
3.5mm	9F Simplified Morgan	4.93	5.30	5.65			
3.5mm	9F Radiator	5.14	4.26	5.85	10.38	5.90	4.42
3.5mm	9F Guppy (Slim Profile)	5.00	1.42	5.60	5.66	5.85	3.54
3.5mm	12F Simplified Morgan	6.00	21.70	6.10	15.09	6.60	16.81
3.5mm	11F Can	5.73	16.23	6.20	16.98	6.40	13.27
4.0mm	9F BeeHive	5.50	11.56	6.00	13.21	6.10	7.96
4.0mm	9F Can	5.63	14.20	6.00	13.21	6.10	7.96
4.0mm	9F Can Guppy	5.73	16.23	6.00	13.21	6.10	7.96
4.0mm	9F Can Guppy Suspended	5.23	6.09	6.00	13.21	6.30	11.50
4.0mm	9F Gear	5.48	11.16	5.98	12.83	6.25	10.62
4.0mm	9F Big Fins	5.30	7.51				
5.00mm	9F Distal	5.60	13.59				
6.0mm	9F Can	5.90	19.68	6.50	22.64	6.60	16.81
6.0mm	9F BeeHive			6.50	22.64		
8.0mm	9F Simplified Morgan	4.91	-0.41	5.10	-3.77		
8.0mm	9F Can	6.30	27.79	7.10	33.96	7.30	29.20

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